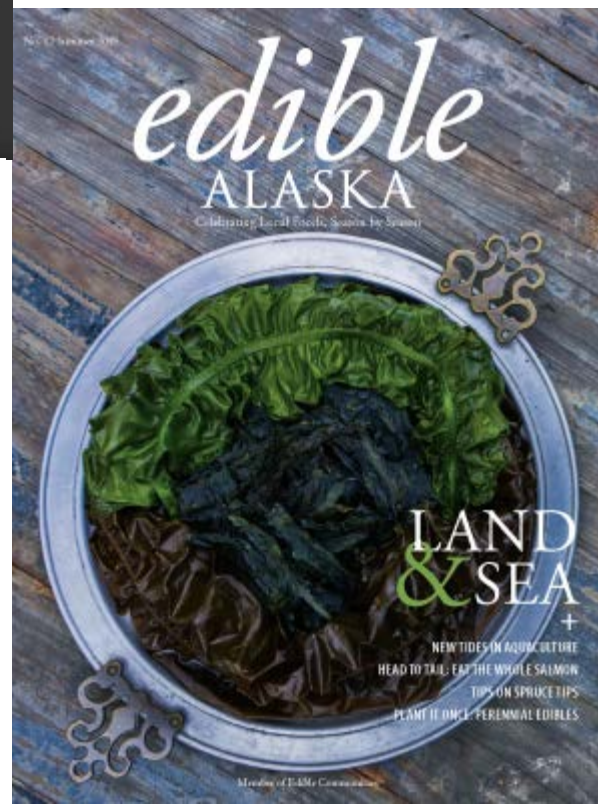




# *Kelp Markets and Processing for Alaska Farmers*

*Presented to:*  
**Prince William Sound  
Economic Development  
District**  
*December 3, 2020*

*Presented by:*  
**Riley Smith, AFDF**



Alaska Fisheries Development Foundation, Inc.



MADE IN ALASKA

# MARICULTURE

## *Today's presentation*

- *Overview of AFDF and the MTF*
- *Mariculture Dev. Plan*
- *Alaska mariculture industry and growth*
- *Alaska seaweed products in the marketplace, buyers*
- *U.S. seaweed market growth*
- *Alaska Industry needs, AFDF current projects and next steps*



Alaska Fisheries Development Foundation, Inc.

Since  
1978

***Mission - to identify opportunities common to the Alaska seafood industry & develop efficient, sustainable outcomes that provide benefits to the economy, environment and communities***

***Creating Value***

### **Areas of focus:**

- 1) Alaska Symphony of Seafood (product development)
- 2) 100% Club (full utilization)
- 3) Sustainability certification (RFM, MSC, social responsibility)
- 4) Fishing vessel energy efficiency
- 5) **Alaska Mariculture Initiative**





# Mariculture is... enhancement, restoration and farming of shellfish and seaweeds.





# ***Alaska Mariculture Task Force***

Governor Walker established the Alaska Mariculture Task Force (MTF) by Administrative Order #280 in 2016 & extended it by AO #297 in 2018.

**Function:** The Alaska Mariculture Task Force will provide recommendations to develop a viable and sustainable mariculture industry producing shellfish and aquatic plants for the long-term benefit of Alaska's economy, environment, and communities.

Governor Dunleavy maintained the Task Force, which is now working closely with the Governor's ***Alaska Development Team*** towards TF priorities.



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MADE IN ALASKA

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**MARICULTURE**

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# *Alaska Mariculture Task Force*

Mariculture Task Force (11 members):

- Jim Andersen, Alaska Dept. of Commerce
- Julie Decker, AFDF
- Ed Douville, Shaan Seet
- Ginny Eckert, Alaska Sea Grant
- Angel Drobnica, Aleutian Pribilof Island Community Development Assoc.
- Jeff Hetrick, Alutiiq Pride Shellfish Hatchery
- Heather McCarty, Central Bering Sea Fishermen's Association
- Sam Rabung, ADFG
- Mike Stekoll, UAF/UAS
- Kate Sullivan, SARDFA
- Eric Wyatt, Blue Starr Oyster Company







# Task Force Collaborative Planning Process



PACIFIC  
SHELLFISH  
INSTITUTE



ALASKA CHAMBER



SEALASKA



# ***Comprehensive planning included iterative economic analysis***



## Alaska Shellfish Farm Size Feasibility Study



### Economic Analysis to Inform the Alaska Mariculture Initiative: Phase 1 Case Studies

Prepared for  
Alaska Fisheries  
Development  
Foundation

March 2015



In association with  
Pacific Shellfish Institute  
Maine Shellfish Research and Development

August 2017

## Alaska Mariculture Initiative Economic Analysis to Inform a Comprehensive Plan

### PHASE II

Prepared for  
Alaska Mariculture  
Task Force



Prepared by  
**McDowell**  
GROUP





## Economic Analysis to Inform the Alaska Mariculture Initiative:

Phase 1 Case Studies

Prepared for  
Alaska Fisheries  
Development  
Foundation

March 2015

## KEY FINDING

Six key elements for successful  
mariculture development:

- 1) Pre-existing seafood industry
- 2) Public acceptance & support
- 3) Favorable growing areas
- 4) Existing development plan w/  
coordinated R&D strategy
- 5) Successful business plans &  
growing technology
- 6) Workforce development

Funded by:



In association with

Pacific Shellfish Institute

Maine Shellfish Research and Development

This publication was prepared with funds from Award #NA14NMF4270058 from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce. The statements, findings, conclusions and recommendations are those of the authors and do not necessarily reflect the views of NOAA or the Department of Commerce.

August 2017

# Alaska Mariculture Initiative Economic Analysis to Inform a Comprehensive Plan

## PHASE II

Prepared for  
Alaska Mariculture  
Task Force



## ECONOMIC FRAMEWORK

- Six primary species
- 5, 10, 20, 30, 40, 50 yr targets
- Annual production & value
  - Total economic output:
    - = \$100 million in 20 years
    - = \$275 million in 30 years
    - = \$445 million in 40 years
    - = \$570 million in 50 years

*not adjusted for inflation*

***“Growth from the current \$1 million industry to almost \$6 million in five years...may be the most difficult phase along the trajectory...” McDowell Group***

**Funded by:**



Prepared by  
**McDowell  
GROUP**



# ALASKA MARICULTURE DEVELOPMENT PLAN

*Goal:  
Grow a \$100 million  
mariculture industry  
in 20 years.*



*Brief & complete versions available.  
Also available at: [www.afdf.org](http://www.afdf.org)*

STATE OF ALASKA  
MARCH 23, 2018

# *Mariculture Industry Growth : New Farm Applications 2017-2020*

- 400% increase in annual new farm applications to DNR:
  - Pre-2017=1 to 4; 2017=16; 2018=14; 2019=12; 2020=17
  - 1,200+ acres of new farms = ~\$200,000 of new revenue to state in annual lease fees
- Scale of farms increasing from mom-&-pop/family farms to medium-scale:
  - Premium Aquatics approved 127-acre farm site near Craig/Klawock
  - Silver Bay Seafoods approved 182-acre farm site near Sitka for oysters
  - Plans for \$5-10 million initial investments are developing
- Alaska seafood processors are taking interest in processing and farming
  - Silver Bay Seafoods, Trident Seafoods, Ocean Beauty Seafoods
- Clusters of development emerging in multiple regions of the state:
  - Ketchikan/POW/Sitka, **PWS**, Homer, Kodiak, Sand Point
- New interest by CDQ Groups and Alaska Native Corporations
- Fishermen interested in diversifying into seaweed farming
- New companies buying seaweed and developing new products



**Barnacle Foods**

Atlantic Sea  
Seaweed  
Algaline  
Oceans  
Marine  
Nestle  
Biocean  
Scarlatta  
The Northern Co  
Cornish Seaweed Co  
Irish Seaweeds  
Cup of Sea  
Whit  
Is  
Sea  
Seaweed  
Acadian Kelp  
Abakus  
Ocea  
Algolite  
Marinoo  
Quitoia

Blue Evolution and Barnacle Foods purchase kelp from Alaska Farmers. In 2019, farmers may have received .45/lb of sugar kelp and .9/lb ribbon kelp (wet)

# New Food Products



*Kelp Beer from Kodiak!*



Blue Evolution™  
BACK TO THE SOURCE







ALASKA SYMPHONY of SEAFOOD®

**2020**

**Grand Prize Winner**

*Also, winner of Retail category & Juneau  
People's Choice*



A NATIVE CORPORATION

SEALASKA



**Also, new partnership announced between Barnacle Foods & Sealaska**



## 2019 Retail Products

- Wheat Penne & Rotini with Sea Lettuce
- Dried Alaska Kombu & Wakame

## 2020 Retail Products

- Seaweed Popcorn Snack Line: 4 SKUS
- Gluten-free Penne & Rotini

## Current Food Service Products

- Dried Sea Lettuce Flour (whole/flake/flour)
- Blanched/frozen Alaska Kombu & Wakame – 2lb/5lb/10lb

## Active R&D portfolio

- Over 20 product concept prototypes including condiments, baked goods, beverages





OCEANIUM  
Accelerating the Blue Economy

kelp THE WORLD™

*Seaweed as Bio-Plastic*





SPORTSMAN: WILD COAST KINGS

OUT THERE: THE NULATO HILLS

# Alaska

The Food Issue

**Farmers on the Half-shell**  
 Oyster cultivation in Kachemak Bay

**Harvest of Riches**  
 A family garden thrives with hard work

**Fruit Growing**  
 Challenges and rewards

**ON THE EDGE**  
 Nick Jans and That Paleo Thing

**Cheers!**  
 Spirits and Beers in the Last Frontier

# Mariculture: Media

ADN

**Anchorage Daily News**  
 May 16

By the end of the week, kelp farmers will haul in up to 200,000 pounds of ribbon and sugar kelp from waters off Kodiak.

ADN.COM

**Alaska's biggest ever commercial seaweed harvest is happening right now**

edible

ALASKA

Celebrating Local Foods, Season by Season

LAND & SEA

NEW TIDES IN AQUACULTURE  
 HEAD TO TAIL: EAT THE WHOLE SALMON  
 TIPS ON SPRUCE TIPS  
 PLANT IT ONCE PERENNIAL EDIBLES

# WATERFRONT

Blue Starr Oyster Co. launches Flupsy

Over 500 employees worked on a crane to launch a new Blue Starr Oyster Co. Flupsy boat on the water.

Build by Crew Enterprises at Ward Cove

By the way, the Flupsy is a 100-foot-long boat that will be used to harvest oysters from the Kachemak Bay.

THE GUARDIAN

THEGUARDIAN.COM  
**Meet the 'star ingredient' changing fortunes in Alaska's waters: seaweed**

HUMP ISLAND Oyster Company

KETCHIKAN, ALASKA

THEALASKA100.COM  
Hump Island Oyster Farm Tour launches in Ketchikan - The Alaska 100

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ENERGY

## Could Our Energy Come from Giant Seaweed Farms in the Ocean?

A U.S. agency is funding projects to help create a bioenergy industry based on macroalgae

By Anne M. Spector for E&E

READ THIS NEXT

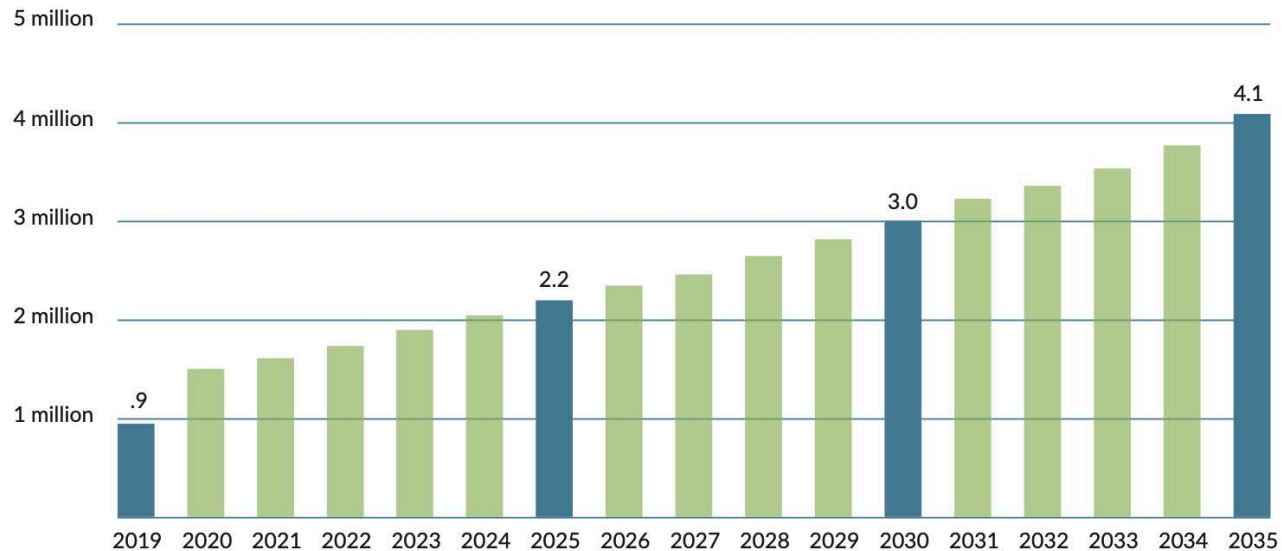
E&E 101: Seaweed and Seaweed: Farming Our Way Out of Climate Change  
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**Figure 2J: Domestic Edible Seaweed Harvest Projections**

Volume, Wet Lbs.				Average Annual Growth	
Source	2019	2025	2035	2019 - 2025	2019 - 2035
Farmed	575,000	1,790,000	3,730,000	20.8%	12.4%
Wild	325,000	365,000	410,000	2.0%	1.4%
<b>Total</b>	<b>900,000</b>	<b>2,155,000</b>	<b>4,140,000</b>	<b>15.7%</b>	<b>10%</b>

Total  
(weighted avg)

**Figure 2I: Domestic Edible Seaweed Growth Projection (Millions of Wet Lbs.)**



Source: Pentallact Inc. research.

Production estimates are based on Pentallact Inc. research with edible seaweed processors, retailers and foodservice operations.



# 2.7 Primary Species – U.S. Farmed Edible Seaweed

Sugar/skinny kelp (*Saccarina latissimi*) is the primary domestically grown edible seaweed species, although more harvesters are experimenting with additional species for various end-product applications (dulse, laver, etc.).

**Figure 2F: Leading U.S. Farmed Edible Seaweed Species**

Species	Estimated Market Share
Sugar/Skinny Kelp ( <i>Saccharina latissimi</i> )	75% – 80%
Alaria/Winged Kelp ( <i>Alaria esculenta</i> )	10% – 15%
Dulse ( <i>Palmaria palmata</i> )	<10%
All Other <i>Digitata</i> (Horsetail Kelp), Kombu, Nori/Laver, etc.	<10%

Source: Pentalllect Inc. research; Maine DMR.

Note: Reporting confidentiality practices limit species volume information.

Product	Typical Value	Reported Range
---------	---------------	----------------

#### Seed/Nursery

Sugar Kelp	\$100 per 200 ft. spool	\$90 – \$120
Organic Sugar Kelp	\$150 per 200 ft. spool	\$110 – \$200
Alaria	\$100 per 200 ft. spool	\$110 – \$130
Organic Alaria	\$175 per 200 ft. spool	\$150 – \$200

#### Grower/Harvester Stage

Wet Sugar Kelp/Alaria	\$0.40 – \$0.70 / lb.	\$0.26 – \$1.00 / lb.
Wet Organic Sugar Kelp/Alaria	\$0.60 – \$1.00 / lb.	\$0.50 – \$2.00 / lb.

#### First Stage Processed – Dry

Sugar Kelp/Alaria	\$6.00 – \$8.00 / lb.	\$3.00 – \$10.00 / lb.
Organic Sugar Kelp/Alaria	\$9.00 – \$12.00 / lb.	\$8.00 – \$16.00 / lb.

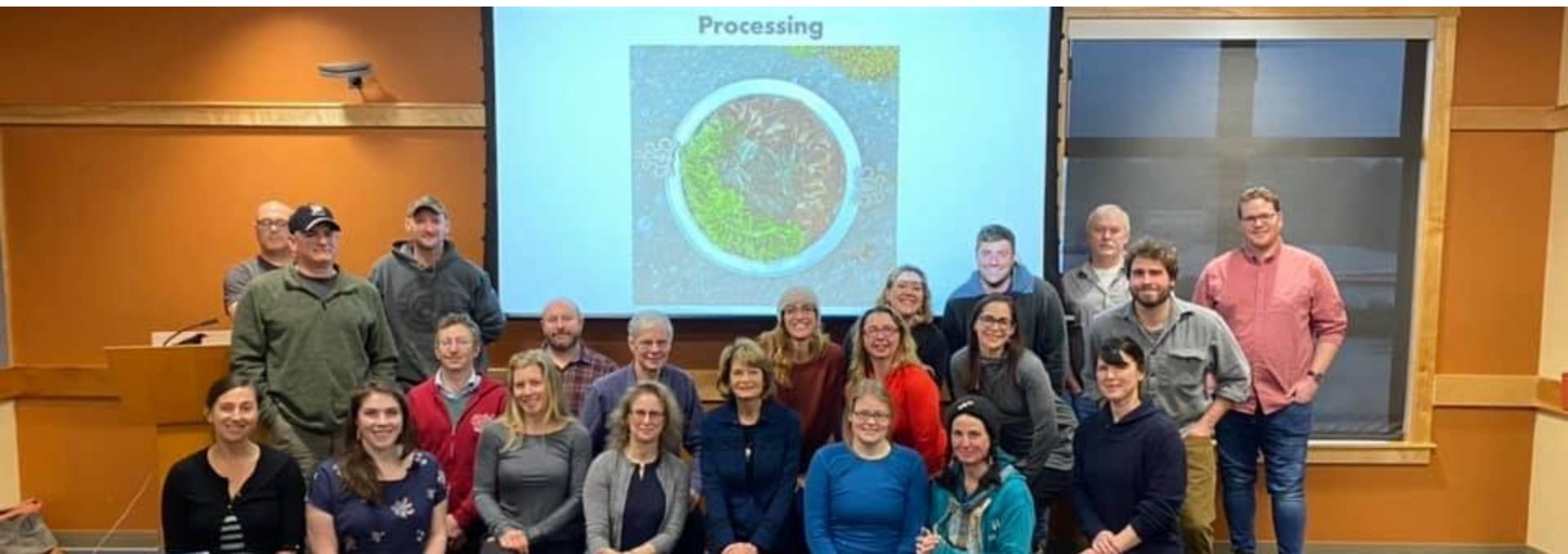
#### Second Stage Processed – Finished Products

Sugar Kelp/Alaria	Wide Variation: \$10.00 – \$50.00+ /lb.
Organic Sugar Kelp/Alaria	

# AFDF Projects

- Alaska Mariculture Initiative – Phase 2
- **Alaska Seaweed Product Development and Market Assessment**
- Alaska Mariculture Map – Phase 2
- **Connecting Alaska Seaweed with New Markets**
- **Enable Increased Manufacturing and Sales of Alaska Seaweed**
- Spawning Mariculture Business in Southwest Alaska
- Development of Scalable Coastal and Offshore Seaweed Farming

Funding agencies: DOE ARPA-E, USDA, ADNR, NOAA, Denali Commission, Pacific States Marine Fisheries Commission.





# **AFDF Projects Related to Alaska Seaweed Market and Product Development**

- **Alaska Seaweed Product Development and Market Assessment**
  - **Partners: AFDF, ASG, Alaska Manufacturing Extension Partnership, Seagrove Kelp**
  - **Create 5 new seaweed product prototypes, recipe guides, conduct literature review of domestic seaweed market research**
- **Connecting Alaska Seaweed with New Markets**
  - **Partners: AFDF, Barnacle Foods, Rising Tide Communications, McKinley Research**
  - **Complete a Domestic and European market assessment for Alaska seaweed and marketing communications strategy**
- **Enable Increased Manufacturing and Sales of Alaska Seaweed**
  - **Partners: AFDF, ASG, PNNL, Denali Commission**
  - **Complete a global seaweed asset map, expand on domestic and European market assessment – globally, expand on marketing communications strategy, explore seaweed industry expansion scenarios, develop business planning tools for seaweed farmers and identify primary processing equipment.**



The logo is a dark green circle containing the text 'Seagrove' in a white serif font, a stylized green wavy line, and 'KELP CO.' in a smaller white serif font.

Seagrove

KELP CO.

Questions?

